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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/665,159	09/19/2000	Yusaku Fujii	826.1621/JDH	4866

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EXAMINER

AHMED, SAMIR ANWAR

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 03/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/665,159

Applicant(s)

FUJII, YUSAKU

Examiner

Samir A. Ahmed

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 6-48 and 50-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-48 and 50-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 2/14/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

1. The amendment filed 3/15/06 have been entered and made of record.
2. The IDS filed 2/14/06 was not considered by the Examiner because the communication issued in corresponding European Application No. 00308256.7 refers to the references cited as D1, D2, and D3. The references are neither identified nor provided for the Examiner to determine their relevance to the instant application.
3. Applicant's arguments filed 8/08/05 have been fully considered but they are not persuasive for the following reasons:

Applicant alleges, "The Examiner noted the n-th degree [,]" (page 1, line 12–page 2, line 27). The Examiner disagrees. Firstly, while the ridge connection direction information is a ridge count, the ridge connection direction information has direction information (see col. 10, lines 65-67) and as shown in Fig. 10, it has a direction, positive for above direction and negative for below direction (col. 16, lines 3-12). Secondly, claims 1, 9, 18, 23, 31, 40, 45, 46, 47, 48 are properly rejected over Fujii, because these claims recite "match in at least one of position, type, and direction" and Fujii is matching at least the type and the position. These claims do not require the reference to have all three features. Thirdly, claim 3 is properly rejected because Fujii discloses whether or not the two feature points are the same based on whether or not ridge connection relation information (feature information) satisfies a predetermined criteria (col. 13, lines 30-33). The ridge connection relation is defined as the relation of positions of feature points on a ridge spaced apart from particular ridge by a predetermined number of ridges (predetermined range) (col. 13, lines 3-27), i.e., the number of ridges and the feature information matches in a predetermined range.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4, 6-48, 50-51 are rejected under 35 U.S.C. 102(e) as being anticipated by Fujii et al. (6,233,348). The grounds for rejections stated in paragraph 4 of the Office Action mailed on 9/15/05, are incorporated by reference herein.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Fujii et al. (6,233,348) and Jain et al (U.S. Patent 6,289,112) [Jain et al. incorporates by reference U.S. Patent 6,049,621)].

As to claim 50, Fujii discloses a method of comparing first and second fingerprints, comprising:

identifying vicinal points of the first and second fingerprints in fingerprint ridges

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(Co1. 8, lines 9-38, Fig. 4, col. 9, lines 12-28),

comparing position, type and direction of a target vicinal point in the first fingerprint with position, type and direction of a corresponding feature point in the second fingerprint [each feature point include information of other feature points connected thereto and information of other feature points on adjacent ridges (namely, ridge connection relation information) along with the position, type, and direction thereof (col. 8, lines 33-38) (i.e., each feature point includes ridge connection relation information of other feature points on adjacent ridges (vicinal points) along with their position, type, and direction information. As clearly shown by Figs. 4, col. 9, lines 12-31, and Fig. 10, col. 15, lines 44-52, for a target feature point P5 (point to be matched in input fingerprint and registered fingerprint), ridge connection relation information from point P5 to adjacent feature points (vicinal points) is considered including Type (bifurcation or end point), position and direction (0-th degree, first degree, -first degree). The ridge connection relation information (vicinal feature point information including type, position and direction) is compared in the matching process between an input fingerprint and corresponding feature point in a registered fingerprint to identify the fingerprint (col. 11, lines 58-63, col. 12, lines 8-13, lines 33-45, col. 12, lines 3-19 and Col. 13, lines 28-31)], and

determining whether there is a match between the first and second feature points responsive to the comparisons (Col. 12, lines 20-29).

Fujii does disclose the direction associated with a ridge direction.

Jain discloses an improved and reliable method to obtain accurate and reliable minutiae features (ridge ends and bifurcations) (see Fig. 4) to effectively determine identity of a person (col. 2, lines 52-54). The extracted minutiae is identified as a ridge ending or a ridge bifurcation (type), for each detected minutiae the (x, y) coordinates (position) and the orientation (direction), which is defined as the local ridge orientation (direction) of the associated ridge is recorded (col. 18, lines 1-21). It is clear from that minutiae (ridge end or bifurcation) direction definition that it adheres with the well-known and conventional definition of the minutiae directions shown in Figs. 1A, 1B, (col. 1, lines 51-55). These recorded ridges (includes type, position, and direction associated a ridge direction) are used for matching (comparisons) points in a fingerprint with corresponding points in a registered fingerprint (col. 28-35). One of ordinary skill in the art would clearly conclude from Jain's teachings that accurate and reliable minutiae features (type, position and direction associated with a ridge) are required to effectively determine the identity of a person by the comparison process. It would have been obvious to one with ordinary skill in the art at the time the invention was made to use the teaching of Jain to modify the method of Fujii by using type, position and direction associated with a ridge direction for feature point comparisons in order to effectively determine the identity of a person by the comparison process.

As to claim 51, Fujii further discloses, wherein a match exists when there is a match in the comparisons of one of the position, type and direction [As clearly shown by Figs. 4, col. 9, lines 12-31, and Fig. 10, col. 15, lines 44-52, for a target feature point P5 (point to be matched in input fingerprint and registered fingerprint), ridge connection

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relation information from point P5 to adjacent feature points (vicinal points) is considered including Type (bifurcation or end point), position and direction (0-th degree, first degree, -first degree). The ridge connection relation information (vicinal feature point information including type, position and direction) is compared in the matching process between an input fingerprint and registered fingerprint to identify the fingerprint (col. 11, lines 58-63, col. 12, lines 8-13 and Col. 13, lines 28-31)).

As to claim 52 refer claim 50 rejection. Jain further discloses where feature point direction is ridge direction when the feature point is an end point and a direction of a larger number of ridges when the feature point is a bifurcation point [for each detected minutiae (ridge ending, ridge bifurcation), orientation (direction) which is defined as the local ridge orientation (direction) of the associated ridge is recorded (col. 18, lines 1-21). It is clear from that definition that a ridge ending orientation (direction) is defined as the local ridge orientation (direction) of the associated ridge; a ridge ending is an end feature point. It is also clear from that definition that a ridge bifurcation orientation (direction) is defined as the local ridge orientation (direction) of the associated ridge and because a ridge bifurcation is by definition a ridge divided into two branches, the direction is associated with the two ridges of the ridge bifurcation (i.e., direction of a larger number of ridges). It is clear from that ridge ending and ridge bifurcation orientation (direction) definition that it adheres with the well known and conventional definition of the ridge ending and ridge bifurcation directions shown in Figs. 1A, 1B, (col. 1, lines 51-55) and which clearly shows a ridge ending (end point) having a direction

associated with the ridge and ridge bifurcation direction having a direction associated with the two ridges of the ridge bifurcation.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

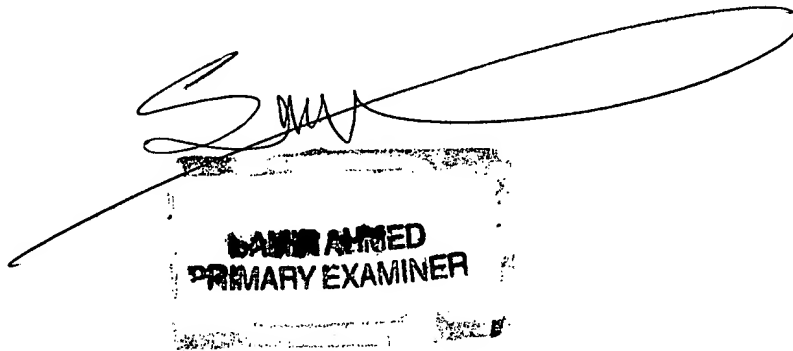
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samir A. Ahmed whose telephone number is (571) 272-7413. The examiner can normally be reached on Mon-Fri 8:30am-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SA



A handwritten signature in black ink is written over a rectangular official stamp. The stamp contains the text "DANIEL M. MED" on the top line and "PRIMARY EXAMINER" on the bottom line. The signature is a cursive-style name that appears to be "S. M. J." followed by a large loop.